

SCIENCE & GOVERNMENT REPORT

The Independent Bulletin of Science Policy

Vol. V, No. 7

P.O. Box 6226A, Washington, D.C. 20015

April 1, 1975

Advisory Unit "Astonished" by Cancer Research Priorities

A subcommittee of the National Cancer Program's topmost advisory board has expressed "general astonishment" at the "low priority" accorded research into environmental causes of cancer, and has suggested that consideration be given to expanding that quest by shifting funds away from the heavily supported but elusive search for cancer-related viruses.

The recommendation was delivered March 17 to the National Cancer Advisory Board (NCAB) by Phillip Shubik, director of the Eppley Institute for Research in Cancer, University of Nebraska. Shubik, who is a member of the NCAB, chairs its 5-member Subcommittee on Environmental Carcinogenesis, and based his report on conclusions drawn from two days of meetings with an outside panel of nine specialists in cancer research and treatment. The report he presented was described by officials of the National Cancer Institute (NCI) as unanimously endorsed by all the consultants and subcommittee members; no dissents or reservations were appended to the report.

The preamble to the report states, "There was an obvious sense of general astonishment throughout the meetings that the National Cancer Program does not appear to have accorded an adequate priority nor sense of urgency to the field of environmental carcinogenesis particularly when this concerns chemical carcinogens."

"In spite of the fact that there is widespread recognition of the importance of environmental chemical carcinogenesis in the press, by the lay public and in the Congress, it would seem that the problem has been accorded a low priority in the National Cancer Program and, as far as could be judged, to absorb perhaps 10 per cent of the budget"

In the body of the report, the subcommittee expresses the view that NCI "should not have to bear the major responsibility for the routine testing of environmental carcinogens, but in collaboration with private and other government organizations should provide "expertise and assistance in coordination and scientific leadership."

Specific recommendations include increased emphasis on cancer prevention, with a major role assigned to the national network of Cancer Centers that NCI is establishing under the National Cancer Act of 1971. The Centers, the report states, "should be required to compile systematically on all their patients information concerning environmental exposure. Their educational programs should emphasize the epidemiology and preventative aspects of cancer. Investigative efforts in environmental carcinogenesis and

epidemiology in Cancer Centers should be encouraged."

The subcommittee also urges NCI to support basic research on environmental causes of cancer and to encourage interest in such research by inviting research applications.

It also notes that cancer prevention is a fairly underdeveloped field in medical education, and suggests that NCI commission the preparation of teaching films for distribution to medical schools.

Finally, the subcommittee, in the closing paragraph of its 8-page typewritten report, wades into the controversial issue of priorities for NCI's budget, and focuses on the viral program, which now accounts for about 10 per cent of NCI's \$600-million-a-year budget.

"Epidemiology thus far seems to suggest that a viral etiology for most human cancers is an unlikely eventuality; in view of this, the distribution of the budget of the NCI in the area of etiology with its emphasis on viral oncology should perhaps be reconsidered; perhaps the time is ripe for a reordering of priorities or at least for an in depth

(Continued on Page 2)

In Brief

Theodore Cooper's appointment as HEW Assistant Secretary for Health now seems virtually assured, pending the slow process of FBI clearance. Cooper, former Director of the National Heart and Lung Institute, served as deputy to the recently resigned Assistant Secretary, Charles Edwards, and now holds the post on an acting basis.

Once he's in, it also seems certain, Donald Frederickson, head of the Institute of Medicine of the National Academy of Sciences, will be appointed Director of the National Institutes of Health. That post has been vacant since last December, when Edwards, on the eve of his resignation, fired Director Robert Stone.

National Academy of Sciences employees who are puzzled by lack of opportunity to meet President Philip Handler have been provided with an explanation in the March 5 issue of *Footnotes*, the NAS staff publication. We quote: "It is regrettable that many members of the staff never come in contact with the President of the Academy. The reason lies in the tremendous dedication and skillful energy he brings to the manifold problems of the Academy in the contemporary world. This preempts his time."

The "War on Cancer": Tracing the Strategy

As evidence of environmental linkages to cancer accumulates, it is useful to speculate on why the principal leaders of the War on Cancer continue to perform like the cavalry generals who remained oblivious of news of the tank.

To say that they are sincere and exceeded by no one in a desire to eliminate cancer is true, obvious—and leads nowhere. Frank Rauscher, director of the National Cancer Institute (NCI), has publicly stated his belief that some 90 per cent of cancers are environmental in origin. Nevertheless, by the most charitable estimate, only 10 per cent of NCI's funds are devoted to prevention of cancer, while the remainder goes to research and treatment aimed at curing cancer. An examination of the January 1974 subject index of current NCI grants reveals only one full page—out of 307—on projects related to human epidemiology and population studies, subjects which many researchers claim are bursting with intriguing and largely

Cancer (Continued from Page 1)

examination of this basic conclusion. The final recommendation of the subcommittee is that the (NCI) director be asked to provide the subcommittee with a breakdown of funds allocated to environmental chemical carcinogenesis and that the subcommittee be kept aware on a continuing basis of any budgetary reallocations that occur."

That final recommendation may sound quite innocent, but in bureaucratic contention, information is ammunition. NCI publishes volumes of material concerning its programs, but as SGR learned last year while researching "The War on Cancer": Official Fictions and Harsh Facts," (Vol. IV, No. 21), NCI finds it difficult to provide figures on its spending on cancer prevention. There are, of course, serious problems of definition and it is also difficult to draw boundaries around many types of research programs and tag them as single purpose. But one gets the impression that NCI, with its traditional emphasis on cure rather than prevention, finds a good deal of political utility in these difficulties.

If it can be cajoled, or, if necessary embarrassed or forced, into providing the scientific community and the public with more precise figures, the results might be cause for more than "general astonishment" at the low priority accorded environmental cancer studies. According to some senior officials at NCI, that 10 per cent figure cited by the subcommittee is an unduly generous estimate.—DSG

(Copies of the report may be obtained without charge by requesting the Report of the Subcommittee on Environmental Carcinogenesis from the National Cancer Advisory Board, National Cancer Institute, Bethesda, Md. 20014).

unexplored indications as to the origins of cancer.

Clearly, there is something in the selection process for the leadership of the National Cancer Program that brings to the fore people who, while recognizing the importance of prevention, prefer to concentrate on looking for cures.

One clue is that when the political community, back in the late 1930s, was persuaded to show an interest in cancer through the creation of the National Cancer Institute, it naturally turned to cure-oriented physicians and scientists, since there was scarcely anyone at all then arguing in behalf of the prevention theme. The leadership cadre that was then formed came to the task with the highest credentials and the prestige of established institutions. And, since cancer has always attracted a bountiful share of quack healers, these leaders, orthodox by nature, have always been on full alert against anyone whose professional training and background does not substantially resemble their own. The ultimate symbol of their contempt for the irregulars is a volume published by the American Cancer Society, *Unproven Methods of Cancer Management*, which details "cures" that prudent persons might best avoid. But considering the horrendously low survival rates for many cancers that are treated by methods employed in established and certified medical institutions, it appears reasonable to wonder about the meaning of "unproven methods."

Apart from the quacks, however, are many properly certified researchers and physicians who, like the members of and consultants to the Subcommittee on Environmental Carcinogenesis of the National Cancer Advisory Board, simply disagree with the low priority accorded preventive studies. Why, until recently, at least, have their voices been granted little attention in formulation of the National Cancer Program?

The reason, quite likely, is that the orthodoxy of the establishment tends to blind it to the difference between quackery and dissent, with the result that respectable doubters—though the situation is now fortunately changing under an avalanche of doubt—have been lumped into the "nut" camp.

It is quite significant, for example, that of the 23 persons on the President's Cancer Panel and the National Cancer Advisory Board as of January 1974, not one had a background in epidemiology, public health, preventive medicine, or related areas. Among the members drawn from research and medicine, all could more or less be placed in the cure camp.

Like the Vietnam bomber generals whose remedy for the ineffectiveness of bombing was to urge still more bombing, the cancer cure-ists argue that more of the same will

(Continued on Page 3)

Inquiry into FDA Industry Bias Gets Downgraded

That longago promise of an open inquiry into allegations of industry favoritism at the Food and Drug Administration (SGR Vol. IV, Nos. 16 and 20) has been quietly dropped in favor of a blueribbon review of FDA's own investigation of the matter.

The inquiry into the inquiry will, however, be only one item on the agenda of a newly created Review Panel on Drug Regulation that was announced last week by Caspar Weinberger, Secretary of the Department of Health, Education, and Welfare, parent agency of the trouble-plagued FDA. "The Panel," Weinberger stated in a press release, "will investigate the current policies and procedures relating to the approval and disapproval of drugs for marketing in the United States and will recommend to me methods for improving this process."

The announcement added that "The panel will also determine the extent and nature of public, industry, and professional participation in the drug application review process, and will review allegations of FDA misconduct in this area."

The last-mentioned item refers to Congressional testimony last August by a group of present and former FDA employees and consultants, all of whom contended that favorable decisions on new drug applications were routinely accepted by FDA's higherups, but that negative findings were often overruled, and were frequently followed by reprimands and reassignment to makework duties.

Following those charges, which were made under

—Cures (*Continued from Page 2*)

produce an answer. Since cancer will still be with us even if prevention is given a higher priority, the quest for cures ought not to be at the expense of looking into the preventive possibilities. But what ought to happen is not what will happen, since even the lavishly funded War on Cancer has financial constraints. Thus, if prevention is to be accorded higher support, the money will have to come out of the existing cure-oriented research—and that is what is shaping up as a major political row in cancer research.

The cure-ists are not only well dug in and closely allied with influential figures in Congress, but they also have going for them the fact that prevention inevitably treads on well-established industrial interests that don't relish being branded as sources of cancer. Cure, on the other hand, is politically pain-free, since the only confrontation involved is between the patient and the physician.

Finally, for students of symbols, it is interesting to note that the coat of arms of the National Cancer Institute shows a brawny figure poised with a sword above the astrological cancer crab. A very American response to a problem.—DSG

Members of the Review Panel on New Drug Regulation are:

Allen Astin, director emeritus, National Bureau of Standards;

Thomas C. Chalmers, president and dean, Mt. Sinai School of Medicine;

Marsha Cohen, a young Washington attorney who has represented consumer interests;

Norman Dorsen, general counsel, American Civil Liberties Union, and professor of law, NYU;

Alanson W. Willcox, former HEW general counsel;

David Rall, director, National Institute of Environmental Health, NIH.

The panel will select a chairperson from among the non-governmental members.

Lionel Bernstein, a special assistant to the HEW Assistant Secretary for Health, has been appointed Executive Secretary.

subpoena before Senator Kennedy's health subcommittee, Weinberger announced that a panel consisting of outside and government specialists would conduct a public investigation. Theodore H. Cooper, deputy assistant to HEW's chief of health, Charles C. Edwards, was appointed to organize and head the inquiry. But Cooper dropped out when the protesting FDA group complained that many of the incidents they had reported to Kennedy had occurred while Edwards was head of FDA. Responsibility for the inquiry was then shifted to the office of HEW's general counsel, never to be heard of again publicly until Weinberger's announcement last week.

Meanwhile, FDA Commissioner Alexander M. Schmidt set up his own investigation of the charges. That inquiry, which is still underway, will be reviewed by the newly established panel.

The panel tentatively plans to meet monthly, starting with an organizing meeting April 8. All sessions will be in public.

As for the allegations of industry favoritism, an HEW official said that the panel will initially review FDA's own investigation, and then will decide whether to proceed further on its own. The official, however, emphasized that an examination of the charges against FDA was not considered central to the panel's purposes.

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New Chief Reported for National Institute of Education

The resurrection of the congressionally battered National Institute of Education (NIE) is continuing — though slowly.

Lacking a director since late last year, when Thomas K. Glennan Jr. resigned in an effort to appease Capitol Hill skeptics (SGR Vol. IV, No. 21), NIE has frequently been reported on the brink of getting a new chief, but so far none has appeared. The latest word, however, is that the clearance process is virtually completed and that any day now announcement will be made of the appointment of Harold Hodgkinson, a veteran educational researcher who is at the Center for Research and Development in Higher Education, University of California, Berkeley.

Another step toward rebuilding the ailing agency was recently taken when President Ford appointed John E. Corbally, president of the University of Illinois, as chairman of the National Council on Educational Policy, which, by statute, is the policymaking body for NIE.

Corbally succeeds Patrick Haggerty, board chairman of Texas Instruments, who also resigned last year.

In the absence of its two top officials, NIE has not had very much impact in Congress, which in past years, has severely slashed its budget requests on the grounds that NIE had failed to formulate a persuasive program. Its chief critic, Warren G. Magnuson (D-Wash.), chairman of NIE's Senate appropriations subcommittee, last year suggested that the agency's budget be cut back to nothing and its programs reassigned to the Office of Education, out of which NIE was originally carved in an effort to invigorate educational research. NIE was eventually given a reprieve and \$70 million of the \$130 million that the Administration sought.

For the coming fiscal year, the request is for \$80 million. The verdict is not yet in, but NIE officials see a bit of hope in the fact that Magnuson was not present for the budget hearing, and therefore may have cooled off in his hostility to their organization.

Kennedy Seeks to Protect US Employees Who Reveal Data

Already a formidable instrument for extracting information from the federal government, the Freedom of Information Act would be further sharpened by an amendment that Senator Kennedy has introduced to discourage retaliation against US employees who provide information covered by the Act or in response to Congressional request.

Kennedy's bill (S. 1210, introduced on March 17) would provide protection, for example, for the Food and Drug Administration employees who claim they have been mistreated since they charged before his Health Subcommittee that FDA is ridden with industry bias.

Federal employees who believe they have incurred retaliation for legitimately disclosing information would have the right, under the bill, to bring a civil action in Federal District Court, with the government paying their legal fees if they win.

Also, if a "personnel action" is taken against a federal employee within one year of an information disclosure, the burden will be on the government to prove that punishment was not the motive. That feature might start an avalanche of leaks by employees seeking to protect their jobs, and it is doubtful that it will survive the Congressional gauntlet. But with Congress in a feisty mood concerning its relations with the Executive branch, this newest proposed amendment to the Freedom of Information Act might just make it.

Letter to the Editor

Dear Sir:

I find your publication of continuing interest, but I did want to make a point which I think you may have missed.

In considering the cutbacks proposed to the NIH budget (SGR Vol. V, No. 4), you suggest that this kind of thing will cause great difficulty to medical schools and biology departments. Chemistry departments also receive considerable funding from NIH, since medicinal chemistry is of course one of the most productive of the health-related sciences. A good fraction of the Ph.D.s from chemistry departments enter the pharmaceutical industry where they are engaged in the synthesis of new potential drugs, and a fair fraction of the research done in chemistry departments is directly related to the development of new chemical methods, including new synthetic methods, which are directly applicable to health problems. The decision by NIH a few years ago to terminate their predoctoral fellowship program, for instance, was probably more damaging to chemistry departments in the country than to any other academic division.

Thus, please be assured that chemists are just as alarmed as are medical school and biology department people by the proposed cuts in the NIH budget.

Ronald Breslow, Chairman,
Section of Chemistry,
National Academy of Sciences;
Professor of Chemistry,
Columbia University

Ocean Researchers Jittery over CIA Sub Episode

Although the Soviet Union has maintained silence about the CIA's attempt to salvage a Russian submarine from the bottom of the Pacific there is some concern in the oceanographic research community about the possible implications of the affair for ocean research in general, and for cooperation between the United States and the Soviet Union on marine science in particular.

It is possible, of course, that the Soviets may simply choose to ignore the affair entirely. And it is also possible that any diplomatic fallout will not affect research agreements from which the Soviet Union stands to gain a good deal of practical benefit. Previous ups and downs in detente, it should be noted, have scarcely affected the course of US-USSR scientific cooperation. Nevertheless, at least one hitherto flourishing collaborative venture has been placed in a peculiar position by the CIA's activities.

Last year, the Soviet Academy of Sciences became a full partner in the highly successful Deep Sea Drilling Project (DSDP), on payment of an annual share in the operating costs amounting to \$1 million. Concern is being expressed about future Soviet participation in the project because the DSDP research ship, the Glomar Challenger, is owned and operated by Global Marine, Inc., the company which designed and operated the CIA's salvage vessel, the Glomar Explorer.

Though the Glomar Challenger is operated by Global Marine under contract to the Scripps Institution of Oceanography, with money supplied by the National Science Foundation, the company's links with the CIA may raise a few doubts in the Soviet Union about the wisdom of continuing to participate in the DSDP.

And such concerns were not helped much by a report in the *Washington Post*, which alleged that the Glomar Challenger even did some initial reconnaissance work on the sunken submarine before the salvage attempt was made. The report has been hotly denied by the NSF because, for one thing, as its publicly available logs show, the ship was not in the vicinity of the wreck at the time it was said to be aiding the CIA; for another, there were two Soviet Academicians aboard for that entire leg of the ship's cruise.

Asked about the allegations last week, Scripps Director William Nierenberg said that the Glomar Challenger's activities are a matter of public record, and that it would have been "literally impossible" for it to have been diverted on clandestine business. He added that the Glomar Challenger does not carry camera gear.

Nevertheless, whatever the effects of the CIA's salvage job on US-USSR cooperation, fears are being expressed about the implications of the affair for the outcome of the Law of the Sea Conference. Ironically, the conference reconvened in Geneva just two days before the salvage operation hit the headlines.

Of particular concern to oceanographers is the possibility that the elaborately concealed operation may undercut the argument being put forward by industrialized countries that research should be allowed to proceed unfettered on and under the high seas.

The developing nations want oceanographic research regulated by an international body, and they have also argued strongly that coastal states should have the right to oversee research projects carried out within the 200-mile economic zone that is likely to be set up around coastlines. They have based their argument chiefly on understandable suspicions that research vessels may be used as a cover for espionage or for economic exploitation of ocean resources. By concealing the Glomar Explorer as a prototype seabed mining vessel, the CIA has provided considerable justification for such suspicions.

On the other hand, now that the Glomar Explorer's cover has been blown, one potential roadblock at the Law of the Sea Conference has been removed. Delegates from developing nations have been considerably irked by the fact that Howard Hughes, whose Summa Corporation built the Glomar Explorer for the CIA, has apparently been out in the middle of the Pacific scooping up manganese nodules with scant regard for resolutions declaring seabed riches to be the "common heritage of mankind." Hughes' apparent mining activities had played a strong role in hardening arguments for international control of deep sea mining.

Asked last week what effect he expects the CIA's salvage job to have on the conference, Nierenberg said that though it's too early to tell, the affair will probably generate some heated debate — "the developing countries have never lacked issues on which to blast the United States," he noted — but it will probably turn out to be less important than attempts by the US Congress to protect American seabed mining interests (SGR Vol v. No 5).

Some delegates in Geneva have already indicated, according to reports, that the affair strengthens the case for international regulation of research, however. Finally, it is instructive to compare the ease with which the CIA reportedly secured \$350 million for the salvage operation, with the heated debate in the early 1960s over the costs of the ill-fated Mohole project. Mohole, which was a plan to drill a hole through the Earth's crust, was eventually aborted in the face of estimates that it would cost about \$125 million. — C.N.

Job Plight Causes Astronomers to Urge Enrollment Cut

In what is probably an historic first in the history of science, the leaders of a major discipline — astronomy — have reluctantly concluded that job prospects in their field are so poor that doctoral enrollments should be reduced.

The recommendation is contained in a report, *Employment Problems in Astronomy*, issued last week by the Astronomy Manpower Committee of the National Academy of Science's Committee on Science and Public Policy. The report notes that between 1970 and 1973, the number of Ph.D.'s employed in astronomy rose from 623 to 1313, setting a growth record for all fields of physics in that period. But with at least 600 new Ph.D.'s expected in the next five years, the Manpower Committee foresees only 50 to 100 openings through retirement, and probably no more than 200 from all possibilities.

Universities that grant doctoral degrees in astronomy and astrophysics provide the bulk of employment for Ph.D. astronomers, the report notes. But while the number of such institutions has more than doubled since 1968, federal support, in terms of purchasing power, has actually declined.

To cope with the problem, the Manpower Committee recommends, astronomy departments should advise prospective students of the poor job market, and carefully screen applicants and those in the early phases of training. In addition, it is suggested that graduate programs should be modified to prepare students for jobs in industry and small colleges.

Another recommendation calls for the American Astronomical Society to encourage the expansion of undergraduate astronomy programs so as to create new teaching positions, and for state legislatures to encourage the development of astronomy courses in continuing education programs.

Also, the Committee notes that NASA has reduced support for analysis of scientific space missions, and urges the agency to reexamine its programs in that area.

The study was chaired by Leo Goldberg, director of the Kitt Peak National Observatory.

Copies of the study are available without charge from the Committee on Science and Public Policy, National Academy of Sciences, 2101 Constitution Ave. NW, Washington, DC 20418.

FDA Pondering Another Shift on Cyclamates

Having been almost wrecked by the manner in which it abruptly swept cyclamates from the market in 1969, following reports that the sweetner caused bladder cancer when fed to rats in carload quantities, the Food and Drug Administration has been treating with extreme caution the mounting pile of evidence which indicates that the sweetener may not be carcinogenic after all. Nevertheless, FDA now seems to be quietly paving the way for a limited return of cyclamates to the market.

Last month, the FDA reversed an earlier determination that there is not enough evidence on which to base a reconsideration of its 1969 ban and asked the National Cancer Institute to set up a blueribbon committee to decide whether or not cyclamates are carcinogenic.

In a letter to NCI Director Frank Rauscher, Alexander Schmidt, the Administrator of FDA, noted that a number of studies have been conducted since 1969 "specifically to determine whether cyclamates are carcinogenic." On the basis of these studies, Schmidt said, "a large number of oncologists have apparently concluded that the original determination that cyclamates are carcinogenic was erroneous. The World Health Organization/Food and Agriculture Organization has also reached this opinion."

It may well be asked why the FDA turned to the National Cancer Institute to examine the evidence on cyclamates, rather than the National Academy of Sciences.

One reason may be the Academy's penchant for secrecy, for Schmidt's letter suggests that "it is, of course, important that this matter be explored in a public manner." He went on to note that use of an advisory committee "subject to all of the provisions of the Federal Advisory Committee Act, will guarantee that all interested persons will have full access to the committee in order to make known their views on the issues involved."

Though the terms of Schmidt's letter seem to indicate that FDA's top brass is of the opinion that cyclamates are not carcinogenic, further, and more conclusive, evidence of such an attitude is to be found in a letter sent by Richard J. Ronk, director of FDA's Division of Food and Color Additives, to Abbott Laboratories, the manufacturer of cyclamates.

Informing Abbott of the NCI review, Ronk stated that the question of the carcinogenicity of cyclamates "seems to break rather clearly into two points of view. One is the apparent opinion of the oncological community of the world that cyclamates when tested in accordance with appropriate protocols are not carcinogenic. The other is the opinion of some of our staff scientists that the carcinogenicity of cyclamates remains an open question".

Though it's crucial to determine whether or not

(Continued on Page 7)

Princeton Aerospace Engineer Named President of NAE

The long and frequently frustrated search for a new president for the National Academy of Engineering (NAE) has concluded with the selection of Courtland D. Perkins, chairman of the Department of Aerospace and Mechanical Sciences at Princeton University.

Perkins, who is 62, has accepted a nomination offer from the NAE Council and, since he is the only candidate that will be presented to the 500-member affiliate of the National Academy of Sciences (NAS), his election is assured. He will take office at the April 24 annual meeting, succeeding Robert Seamans Jr., who resigned late last year to become head of the Energy Research and Development Administration. By inside account, three other prospective nominees turned down the job before the nominating committee fixed on Perkins (SGR Vol. 5, No. 5).

In addition to the NAE presidency, Perkins will also become chairman of the NAS Assembly of Engineering, which, in the complex structure of the NAS-NAE, comes under the National Research Council, which is the operating arm of the two organizations. The joint role for Perkins is of considerable importance, since the NAE by itself is essentially an honorary organization while the Research Council and its assorted assemblies have considerable scope for conducting the studies which are the principal products of the academies.

Cyclamates (*Continued from Page 6*)

cyclamates are carcinogenic, since the Delaney Amendment will keep them off the market if there is any doubt on the matter, it is not the only possible health hazard associated with the sweetener. Ronk stated in his letter that there is some evidence which indicates that cyclohexylamine, a metabolic product of cyclamates, causes degenerative changes in the testes of rats.

The letter went on to note, however, that "all of the scientists involved agree . . . that the maximum no-effect dose of cyclohexylamine in terms of testicular atrophy in rats is about 5000 parts per million." Applying the usual 100-fold safety factor for setting limits on human consumption of food additives, Ronk stated that the studies "would allow for about 0.5 gm per day total cyclamate ingestion."

Abbott has, understandably, taken that as a broad hint that FDA is prepared to set regulations to limit use of cyclamates to about 0.5 gms a day if NCI determines that the stuff is not carcinogenic. Whether people will consume the sweetener after all the controversy is, however, another matter.

Binary Gas Opposition Gains

The Army's latest attempt to gain approval for its binary nerve gas program is running into mounting opposition in the House. A bill, prohibiting expenditure of any funds for production of binary munitions, was introduced by Rep. Richard Ottinger (D-N.Y.) on March 14; by March 25, it had 50 co-sponsors and, according to Ottinger's office, more are promised.

The bill's target is a budget request for \$8.8 million to begin production of 155 mm shells, specially designed to carry the two components of the binary agent. Last year, Congress defeated a Pentagon request for \$5.8 million for the weapons, but the military, undaunted, simply renewed and increased its request this year.

Moreover, according to the military posture statement submitted to Congress in February by General George S. Brown, chairman of the Joint Chiefs of Staff, it is not only the Army that is interested in binaries. Brown stated that in addition to the "modest" request for funds to produce binary shells, "the Navy has included a budget request for the development of a binary bomb which will also be used by the Air Force." In a letter to Brown, Ottinger asked the rather pertinent question, "Where will it stop?"

There is every reason, in fact, to suggest that it will stop where it is at the moment, because Congress is likely to deny the Pentagon's request for funds once again. Last year, Congress accepted the argument that if the Pentagon were allowed to proceed with its binary program, chemical disarmament talks now going on in Geneva would be torpedoed. That argument is just as strong this year.

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NSF Assailed for Role in Textbook Program

After being besieged with publicity-grabbing attacks on its social science programs, the National Science Foundation now finds itself caught in the middle of a bitter controversy over the content of school textbooks.

At issue is a social studies course, developed during the 1960s by the Educational Development Center in Cambridge, Mass., with NSF support. Titled, "Man: A Course for Study" (MACOS), the course was completed in 1970 and NSF has been actively promoting its use in elementary schools during the past few years.

But, responding to criticisms from some members of the House Committee on Science and Technology, NSF Director H. Guyford Stever has cut off all further funding for MACOS, and he has initiated an internal review of NSF's promotion of pre-college science courses.

Criticisms of MACOS were first raised in the committee by Rep. John B. Conlan, a conservative Republican from Arizona, who believes that the course is "designed to mold children's social attitudes and beliefs along lines that are almost always at variance with the beliefs and moral values of their parents and local communities."

Conlan objected to the course, which is already being taught in some 1,700 elementary schools, because of what he terms the "recurring themes" in its 60 lessons of "communal living, elimination of the weak and elderly in society, sexual permissiveness and promiscuity, violence, and primitive behavior."

Employing a mixture of films, booklets, teacher's guides, records, games and so on, the course is designed for fifth graders. According to a brochure describing it, MACOS attempts to answer the questions "What is human about human beings? How did they get that way? How can they be more so?", and it is based on studies of salmon, herring gulls, baboons, and the Netsilik Eskimos.

Conlan's objections cover a variety of points in the course, but he is particularly concerned about some films of the Eskimos which depict butchering of caribou, and a booklet of traditional Eskimo stories which includes an account of an old woman who was left to die in the snow because she could no longer be supported by the tribe.

The attacks on MACOS have centered, however, on the fact that NSF is actively promoting it against privately developed courses, chiefly by arranging sessions with teachers to familiarize them with the course.

Conlan argues that such activities put MACOS at a competitive advantage, and a spokesman in his office last week likened the situation to "Lysenkoism."

Conlan attempted to strike funds for MACOS from NSF's authorization bill when the Science and Technology Committee marked the measure up, but the attempt failed. The Committee's report on the bill asked Stever to defer funding for MACOS, however, until the matter has been studied by a special panel which is now being established by Committee Chairman Olin Teague (D-Tex.).

Conlan made known that he would still try to remove funds for MACOS when the bill reached the House floor, however, and so Teague had the bill recommitted to the Science and Technology Committee to resolve the matter. In the meantime, Stever said he would not only defer next year's funding, but this year's as well; Conlan declared himself satisfied with that, and the bill once again cleared the committee.

It should be noted that the Science and Technology Committee has repeatedly instructed NSF in the past to put more emphasis on implementing the courses it develops. In this case, however, the committee report notes that NSF "has gone somewhat beyond its normal implementation stage with activities which appear to involve the marketing of curriculum materials."

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